CLAIMS

What is claimed is:

1. A method of applying a heat-rejection coating, comprising the steps of:

supplying a metallic component of a gas turbine engine;

providing a reflective-coating mixture, wherein the reflective-coating mixture comprises a metallic pigment and a reflective-coating-mixture carrier;

applying the coating mixture to a surface of the component by a method selected from the group consisting of air-assisted spraying, airless spraying, brushing, and decal transfer; and

firing the component surface having the reflective-coating mixture thereon to form a reflective coating on the component.

2. The method of claim 1, wherein the step of applying the reflective-coating mixture includes the step of air-assisted spraying the reflective-coating mixture.

3. The method of claim 1, wherein the step of supplying the metallic component includes the step of supplying the component comprising a cobalt-base superalloy.

4. The method of claim 1, wherein the step of supplying the metallic component includes the step of supplying the component comprising a nickel-base superalloy.

5. The method of claim 1, wherein the step of supplying the metallic component includes the step of supplying the component comprising a titanium alloy.

6. The method of claim 1, wherein the step of providing the reflective-coating mixture includes providing the reflective-coating mixture that includes metallic pigment selected from the group consisting of platinum, gold, palladium, silver, rhodium and alloys thereof.

7. The method of claim 1, wherein the step of providing the reflective-coating mixture includes providing the reflective-coating mixture that further includes an organic reflective-coating-mixture carrier.

8. The method of claim 1, wherein the step of applying the reflective-coating mixture includes the method of air-assisted spraying the reflective-coating mixture such that the reflective coating is present in an amount of from about 0.00275 to about 0.00475 grams per square inch.

9. The method of claim 1, further including an additional step before the step of applying the reflective-coating mixture, of applying a ceramic barrier coating onto the surface of the component.

10. The method of claim 9 wherein the step of applying the reflective-coating mixture includes applying the reflective-coating mixture onto the ceramic barrier coating applied to the component.

11. The method of claim 9, wherein the step of applying the ceramic barrier coating includes applying a ceramic material selected from the group consisting of lanthanum and cerium.

12. The method of claim 9, wherein the step of applying the ceramic barrier coating includes applying a ceramic-barrier-coating mixture such that the reflective coating and the ceramic barrier coating are together present in an amount of from about 0.00325 to about 0.00625 grams per square inch.

13. The method of claim 9, further including the step of drying the ceramic-barrier-coating mixture after applying the ceramic barrier coating mixture.

14. The method of claim 9 wherein the step of applying the ceramic barrier coating further includes applying the ceramic barrier coating mixture by air-assisted spraying.

15. The method of claim 1, further including an additional step before the step of applying the reflective-coating mixture, of polishing the component surface.

16. The method of claim 1, further including an additional step before the step of providing the reflective-coating mixture, of pre-oxidizing the component surface of the component.

17. The method of claim 1, further including the additional steps before the step of providing the reflective-coating mixture, of polishing the component surface of the component, and thereafter pre-oxidizing the component surface.

18. The method of claim 1, further including the additional steps before the step of applying the reflective-coating mixture, of polishing the component surface of the component, thereafter polishing the component surface, and thereafter applying the ceramic barrier coating onto the pre-oxidizing component surface.

19. The method of claim 1 wherein the step of providing the reflective-coating mixture further includes providing a mixture including a noble metal encapsulator.

20. The method of claim 1 wherein the step of providing the reflective-coating mixture further includes providing a mixture including a flux.

21. The method of claim 1 wherein the step or providing the reflective-coating mixture includes providing a mixture including a predetermined amount of filler.

22. The method of claim 21 wherein the filler is glass or ceramic materials.

23. The method of claim 21 wherein the filler comprises up to about 25 percent of the reflective-coating mixture by weight.

24. A method of applying a heat-rejection coating, comprising the steps of:

supplying a metallic component of a gas turbine engine, the component comprising a nickel-base superalloy and having a component surface;

pre-treating the component surface; thereafter

air-assisted spraying a reflective-coating mixture onto the pre-treated component surface, the reflective-coating mixture comprising a metallic pigment and a reflective-coating-mixture carrier; and

firing the component surface having the coating mixture thereon.

25. The method of claim 24, wherein the step of pre-treating the component surface includes the step of polishing the component surface, the method of claim 25 further including the steps of pre-oxidizing the component surface, and thereafter applying a ceramic barrier coating onto the component surface.

26. The method of claim 25, wherein the step of applying the ceramic barrier coating includes the steps of air-assisted spraying a ceramic-barrier-coating mixture onto the component, and drying the ceramic-barrier-coating mixture.